



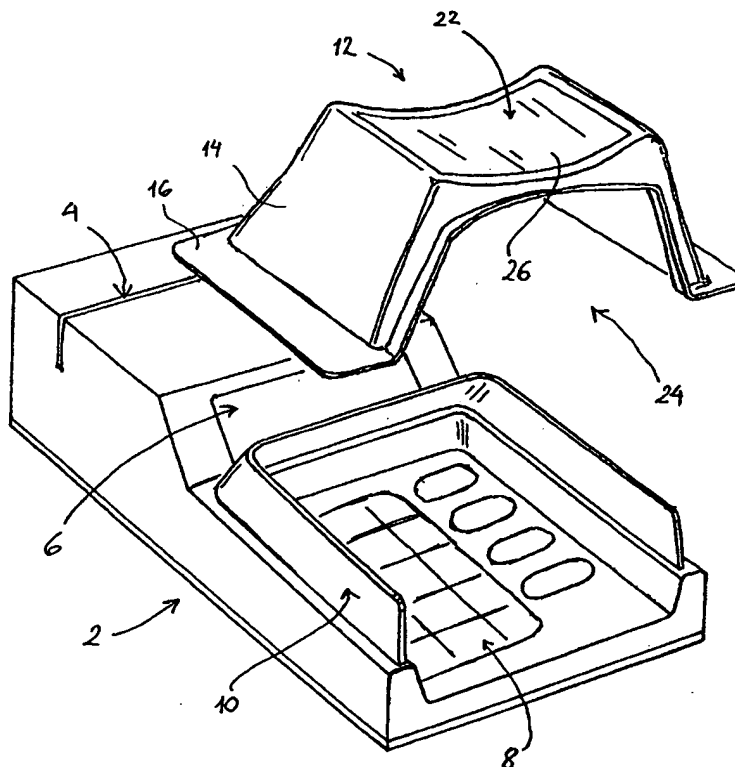
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(54) Title: SHIELDING DEVICE OF A PAYMENT TERMINAL

(57) Abstract

The invention relates to a shielding device (12) for shielding of a keypad (8) at a payment terminal (2) for protection against unauthorized visual access to a user specific code in relation to the use of electronic charge cards at such a payment terminal (2) where the shielding device (12) comprises a frame formed body (14, 16) with a basic form that largely corresponds to that of the keypad area (8) and has a vertical and preferably panel shaped shielding device that is basically encompassing and features an opening in the front (24) for insertion of a hand for operation of the keypad (8) and an opening at the top (22) for visual access. In this manner, it is possible to obtain shielding of the keypad so that unauthorized persons do not gain visual access to the PIN code of the owner of the credit/charge card once the user enters his/her code at a payment terminal.



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Shielding device of a payment terminal

5 The present invention relates to a shielding device for shielding of a keypad on a payment terminal for protection against unauthorized visual access to a user-specific identification code in relation to the use of electronic charge cards at such payment terminals.

10 In order to be able to prevent unauthorized individuals from acquiring knowledge of user-specific codes, such as PIN codes, for credit cards and other charge or service cards by visual spying on the entry of these codes at a payment terminal such as an automaton at a register, an automatic teller machine (an ATM machine) etc., the terminal is often provided with a shielding device surrounding the keypad where the entry of the code is made.

15 Such a shielding device is usually just a raised frame surrounding the keypad area so that the user friendliness of the payment terminal is not compromised.

20 Meanwhile, these frames have proved insufficient for providing efficient shielding since it is relatively easy to see the keypad at an any given angular position from the front and back.

25 In recognition of the problems with the unauthorized reading of the identification codes in connection with self service at the ATM machines or other payment terminals, customers/users are made aware of the problem at several locations by signs and/or yellow lines on the floor urging people in line to show discretion and keep a certain distance to the payment terminal. The result of this is that the distance from which a code could be read by an unauthorized person is significantly increased which means that the risk of unauthorized reading of the code is consequently
30 reduced.

Meanwhile, these initiatives have turned out not to provide the user with sufficient protection and safety when using the payment terminals and it is therefore the object of the present invention to offer a more efficient shielding device for a keypad at a payment terminal.

5

The invention consist of a shielding device of the initially mentioned kind where the shielding device comprises a frame formed body with a basic form that largely corresponds to the keypad area and which is provided with a vertical panel-like shielding device that is essentially encompassing and features an opening at the front
10 for insertion of a hand for operation of the keypad and an opening at the top for visual access by the user.

According to the invention, the shielding device is capable of encompassing the keypad of the payment terminal so that the only visual openings are at the top and the
15 front. The user may operate the keypad by inserting his/her hand in the front opening and will be able to monitor his/her entry through the top opening. The shielding device blocks – or at least blurs – the entry from all angles except from the top and the front. However, these two openings are covered by the user himself. In this manner, it is possible to create effective shielding which is quite simple in design and
20 easily retrofitted or removed from the payment terminals.

According to the embodiment of the invention, the top opening features a transparent cover panel. Combined with a cover panel which is concave when seen from the insertion direction, the panel offers extra protection against weather conditions just
25 as reflections are created that prevent a person from looking down the opening at the top from almost any angular position.

The opening at the top may furthermore or alternatively be provided with vertically oriented lamellas, preferably on the inside of the transparent panel for unidirectional
30 viewing through the top opening. As an alternative or supplement to the transparent panel, the visibility of the keypad is blurred or blocked at the top from all angular positions.

The transparent panel may furthermore or alternatively feature optical processing such as sanding of the surface for creating the unidirectional effect through the top opening. This may also blur the transparency through the top opening.

5

At the bottom, the shielding device may be provided with abutting surfaces for abutment of one or more supporting surfaces surrounding a keypad of a payment terminal so that the shielding device remains stable around the periphery of the keypad.

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According to the embodiment of the invention, the frame formed shielding device and the supporting surfaces are shaped in an encompassing manner in relation to the shape of the keypad area of a payment terminal. In this manner, it is possible to construct a stable and aesthetic and elegant shielding device.

15

In addition, the invention consists of a shielding device in accordance with the first aspect of the invention for shielding of the keypad area of a payment terminal where the shielding device is mounted rigidly on a payment terminal such as an ATM machine.

20

In the following, the invention is described in detail and with reference to the drawings where

Fig. 1 shows a shielding device according to the invention on a payment terminal and

25

Fig. 2 shows a section view through the shielding device according to the invention

Figure 1 shows a payment terminal 2 where charge cards are used, e.g. a Dankort (used in Denmark) – the equivalence being a bank card of any local bank that may only be used domestically. The terminal 2 features a slot 4 for insertion of a charge card, a display 6 and a keypad 8. The periphery of the keypad 8 is provided with a
30 shielding device 10 in order to shield visual access to the keypad 8.

The payment terminal 2 may feature a reader of magnetic cards and a reader of the so-called "chip cards" or other types of charge cards.

5 According to the invention, a shielding device 12 may be placed around the keypad 8 as shown in figure 1. This shielding device 12 consists of a tubular surrounding shield box 14 featuring an opening at the top 22 and at the front 24. The shield box 12 works when placed around the keypad 8 of the terminal by insertion of a hand in the opening at the front 24 for operation of the keypad 8. The user may monitor his/her actions through the top opening 22.

10

When inserting his/her hand in the front opening 24 the user covers the visual access to the keypad 8 from others through the front opening 24 just as the head and body of the user conceal visual access to the keypad 8 from the top opening 22.

15 According to the embodiment of the invention, the top opening 22 is covered by a transparent panel 26, e.g. in plastic. In the shown embodiment, the shielding device 14 has been shaped into a rectangular basic form that largely corresponds to the shape of the keypad. According to the invention, the shielding device is made of polycarbonate providing great resistance to blows and potential vandalism.

20

When applied on e.g. a ATM machine, the bottom of the invention features an abutting surface 16 for abutment of the area around the keypad 8. In this manner, it is possible to create a solid surface for attachment of the shielding device on a payment terminal such as an ATM machine.

25

According to the invention, the designed shielding device forces the user to lean slightly forward when operating the payment terminal so that the need for complete shielding of the keypad 8 has been provided.

30 As shown in Figure 2, the window 26 in the top opening 22 is concave. This eliminates a large number of angles at which a person can actually see through the

window at the keypad. Thus, the concave glass will create reflections that prevent visual access for anybody other than the user.

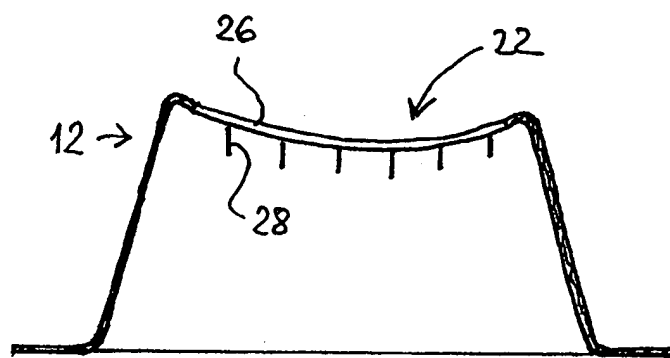
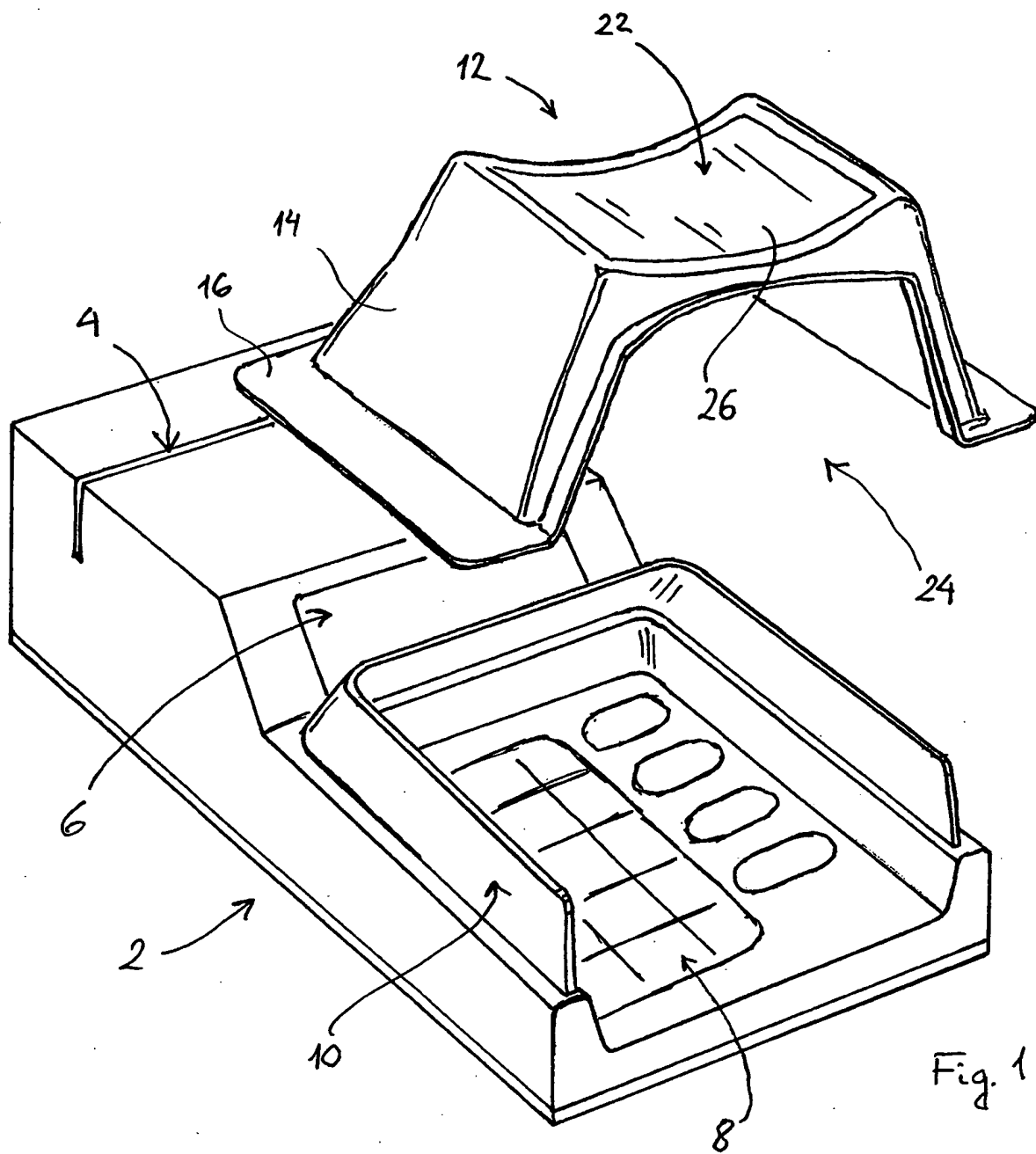
5 As an alternative or a supplement, the top opening 22 may be provided with a number of vertically oriented lamellas 28 that limit the scope of view from which the keypad 8 is visible. This effect may also be obtained by optical sandings, mouldings or similar methods of the glass so that optical interferences or blurrings from particular viewing directions will occur.

Patent Claims

1. A shielding device (12) for covering the keypad (8) of a payment terminal (2) for protection against unauthorized access to a user-specific code in relation to the use of electronic charge cards at the payment terminal (2), characterized in that the shielding device (12) comprises a frame formed body (14,16) with a basic form that largely corresponds to the keypad area (8) and a vertical shielding device shaped as a panel that is essentially encompassing and features a front opening (24) for insertion of a hand for operation of the keypad (8) and a top opening (22) for visual access.
2. A shielding device (12), in accordance with claim 1, characterized in that the top opening (22) is provided with a transparent cover plate (26).
3. A shielding device (12), in accordance with claim 2, characterized in that the cover plate (22) is concave from the insertion direction.
4. A shielding device (12), in accordance with claims 1 to 3, (12) characterized in that the top opening (22) is provided with vertically oriented lamellas (28), preferably on the inside of the transparent plate (26) for unidirectional viewing through the top opening (22).
5. A shielding device (12), in accordance with claim 2 or 3, characterized in that the transparent plate (26) is provided with optical processings such as sanding of the surface for creating the unidirectional effect through the top opening (22).
6. A shielding device (12) , in accordance with claims 1 to 5, characterized in that the shielding device (12) has been provided with abutting surfaces (16) at the bottom for abutment of one or more supporting surfaces around the keypad (8) of a payment terminal (2).

7. A shielding device, in accordance with claims 1 to 6, characterized in that the frame formed shielding device (14) and the abutting surfaces (16) have been adapted to the shape of the keypad area (8) of a payment terminal (2).
- 5 8. A shielding device (12), in accordance with claims 1 to 7, for shielding of the keypad area of a payment terminal (2).

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G07F H01H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

C. DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category *	Citation of document, with indication, where appropriate, of the relevant passages	
X	DE 44 06 115 A (IBM) 31 August 1995 (1995-08-31) the whole document	1-8
X	WO 96 24942 A (GROENBJERG IB) 15 August 1996 (1996-08-15) the whole document	1-5,8
X	ANONYMOUS: "PIN KEYBOARD WITH NON-OBSCURING SECURITY FEATURE" RESEARCH DISCLOSURE, GB, INDUSTRIAL OPPORTUNITIES LTD. HAVANT, no. 308, page 947 XP000096116 ISSN: 0374-4353 the whole document	1,2,5,8
	-/-	

☒ Further documents are listed in the continuation of box C.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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